Conducted by Fremantle Ports with the Freight and Logistics Council of Western Australia and the Western Australian Port Operations Task Force
Acknowledgements

The Fremantle Ports Truck Productivity Study was prepared by Fremantle Ports with support from the Freight and Logistics Council of Western Australia.

The Truck Productivity Study Steering Committee was led by Jennifer Hall, Senior Logistics Analyst, Fremantle Ports, who was the Project Manager for the study.

Active members of the steering committee included:

<table>
<thead>
<tr>
<th>Name</th>
<th>Organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mr Doug Brindal</td>
<td>Fremantle Ports</td>
</tr>
<tr>
<td>Ms Jennifer Hall</td>
<td>Fremantle Ports</td>
</tr>
<tr>
<td>Ms Sophie Gillespie</td>
<td>Fremantle Ports</td>
</tr>
<tr>
<td>Mr Mark Brownell</td>
<td>Freight and Logistics Council of Western Australia</td>
</tr>
<tr>
<td>Mr Graeme Wilson</td>
<td>Indian Ocean Shipping Agency</td>
</tr>
<tr>
<td></td>
<td>Chair, Western Australian Port Operations Task Force</td>
</tr>
<tr>
<td>Mr Rich Bain</td>
<td>Main Roads Western Australia</td>
</tr>
<tr>
<td>Mr Haydn Hampel</td>
<td>Western Australian Road Transport Association</td>
</tr>
<tr>
<td>Mr John Park</td>
<td>Custom Brokers and Forwarders Council of Australia</td>
</tr>
<tr>
<td>Mr John Ward</td>
<td>Australian Wool Handlers</td>
</tr>
<tr>
<td>Mr Jim Stevenson</td>
<td>Stevenson Logistics</td>
</tr>
<tr>
<td></td>
<td>Intermodal Logistics Services</td>
</tr>
</tbody>
</table>

The steering committee was assisted in the data analysis component of the study by consultant Fiona Callander and in an evaluation of the Vehicle Booking System and ContainerChain issues and possible improvement initiatives by MistaMina consultant Peter Kosmina.

Linton Pike of Estill and Associates facilitated two industry workshops in November 2013.

The steering committee acknowledges the work of the Port of Melbourne Corporation and the Victorian Freight and Logistics Council’s Freight Intermodal Efficiency (FIE) Group. The FIE Group undertook the Port of Melbourne/Dynon Precinct Truck Optimisation Plan, which significantly influenced the structure and format of the Fremantle Ports Truck Productivity Study.

The steering committee would like to thank all the industry representatives and operators who participated in the survey, case studies and industry workshops or who otherwise assisted with the Truck Productivity Study.
Contents

Glossary
Executive Summary
Introduction
Findings and Recommendations
Industry Structure
Key Issues Impacting on Trucking Productivity
Conclusion
Truck Productivity Improvement Strategy
Truck Productivity Action Program
Further Information
## Glossary

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bulk run</strong></td>
<td>Movement of a pre-determined minimum number of containers to or from a Container Terminal or an Empty Container Park which has also been pre-planned and separately notified.</td>
</tr>
<tr>
<td><strong>Chain of Responsibility (CoR)</strong></td>
<td>New laws to recognise the responsibilities that others have in the transportation of goods by road, beyond that of just the driver and operator, to improve.</td>
</tr>
<tr>
<td><strong>Container</strong></td>
<td>Standard sealed International Standards Organisation (ISO) metal box used for carrying cargo.</td>
</tr>
<tr>
<td><strong>ContainerChain (CC)</strong></td>
<td>System operated by Empty Container Parks to allow transport operators to notify a time period in which to pick up or deliver a container to/from an ECP.</td>
</tr>
<tr>
<td><strong>Container Terminal</strong></td>
<td>Location in the port where container ships are loaded/discharged, and which provides the landside interface from the wharf.</td>
</tr>
<tr>
<td><strong>Dehire</strong></td>
<td>Process of returning an empty container to an Empty Container Park and to the care of the shipping line.</td>
</tr>
<tr>
<td><strong>Department of Agriculture (DAFF)</strong></td>
<td>Federal department that undertakes biosecurity intervention and inspection of goods and containers entering Australia.</td>
</tr>
<tr>
<td><strong>DO</strong></td>
<td>Delivery Order</td>
</tr>
<tr>
<td><strong>DPW</strong></td>
<td>DP World Container Terminal</td>
</tr>
<tr>
<td><strong>Empty Container Park (ECP)</strong></td>
<td>Location for storing and maintaining dehired empty containers.</td>
</tr>
<tr>
<td><strong>FCL</strong></td>
<td>Full container load</td>
</tr>
<tr>
<td><strong>FEU</strong></td>
<td>Forty foot equivalent unit (ISO container)</td>
</tr>
<tr>
<td><strong>Hire</strong></td>
<td>Process of hiring (collecting) an empty container from an ECP for the purpose of export.</td>
</tr>
<tr>
<td><strong>High productivity vehicle (HPV)</strong></td>
<td>Truck capable of transporting 4 x loaded TEU.</td>
</tr>
<tr>
<td><strong>ICS</strong></td>
<td>Integrated Cargo System</td>
</tr>
<tr>
<td><strong>Intermodal terminal</strong></td>
<td>Location where container transfers between road and rail transport.</td>
</tr>
<tr>
<td><strong>NQRT</strong></td>
<td>North Quay Rail Terminal</td>
</tr>
<tr>
<td><strong>1-Stop</strong></td>
<td>Operator of the Vehicle Booking System at the Container Terminals.</td>
</tr>
<tr>
<td><strong>Port Community System (PCS)</strong></td>
<td>An electronic platform that connects multiple systems operated by a variety of organisations that make up a seaport or an airport community. A PCS provides a ‘single window’ for port-related dealings of all port stakeholders. These include document exchange, financial transactions and visibility/tracking information.</td>
</tr>
<tr>
<td><strong>Quarantine Approved Premises (QAP)</strong></td>
<td>Location where shipments can be inspected and, if necessary, fumigated or chemically treated by the Department of Agriculture.</td>
</tr>
<tr>
<td><strong>QUBE</strong></td>
<td>Container Park operator</td>
</tr>
<tr>
<td><strong>R&amp;D</strong></td>
<td>Receiveal and delivery of containers at port facilities.</td>
</tr>
<tr>
<td><strong>Reposition</strong></td>
<td>Landside repositioning of empty container surplus to local demand.</td>
</tr>
<tr>
<td><strong>Staging</strong></td>
<td>Process whereby a full or empty container is temporarily held for delivery at a later stage.</td>
</tr>
<tr>
<td><strong>TEU</strong></td>
<td>Twenty foot equivalent unit (ISO container) normally 6.1m in length.</td>
</tr>
<tr>
<td><strong>Time slot</strong></td>
<td>Specific time booked at Container Terminal for container receival or delivery by road.</td>
</tr>
<tr>
<td><strong>TPS</strong></td>
<td>Truck Productivity Study</td>
</tr>
<tr>
<td><strong>Truck utilisation</strong></td>
<td>Containers carried per truck movement.</td>
</tr>
<tr>
<td><strong>Truck turn time (TTT)</strong></td>
<td>The time that a truck takes to be serviced within a facility.</td>
</tr>
<tr>
<td><strong>Vehicle Booking System (VBS)</strong></td>
<td>The system operated by Container Terminals to grant specific time slots for road transport operators to pick up or deliver a container to/from a Container Terminal.</td>
</tr>
</tbody>
</table>
Executive Summary

Fremantle Ports undertakes a survey of heavy vehicles each year which identifies the number of container trucks on the roads leading into and out of the port, the level of empty running and the average number of containers per truck movement (truck utilisation). From 2006, this annual survey indicated that truck utilisation rates were stagnating, and in the past three years has indicated a declining trend. There is a direct correlation between truck productivity and the number of trucks on the road, which has a negative impact on the community and industry.

Through intensive data analysis, industry workshops, case study interviews and an online transport operator survey, the Truck Productivity Study sought to identify and understand the current industry structure of container road transporters, and identify the key issues impacting on trucking productivity and strategies to improve this in the future.

It is important that industry focuses on the future and how growing trade volumes will be dealt with in an efficient manner. While the Truck Productivity Study identified many current issues, the strategies identified will enable industry to prepare for the future and achieve productivity and efficiency benefits for industry and the community.

Key industry structure findings include:

- Fremantle has a relatively high number of container transport carriers in respect of the total trade volumes compared to other much larger Eastern States ports, with 31 carriers handling about 75% of total port container volume compared with, for example, Brisbane with 18 carriers.

- Fremantle contends with an unbalanced level of import and export volumes, with a ratio of 1.89 import TEU to every export TEU making two-way loading at the Container Terminals difficult for most transport operators.

- The hours that carriers mainly access the Container Terminals is between 06:00 and 18:00 Monday to Friday. This puts pressure on the peak day periods and creates competition for these peak time slots.

- There is a mismatch in the operating hours of stakeholders across the whole supply chain with Container Terminals and some large transport operators capable of operating 24/7 when required but many importers having more restrictive hours. Empty Container Parks (ECPs) within the port precinct have until recently been open only 12 hours per day but QUBE Central has recently begun operating until 22:00 Monday to Friday.

- Restrictive operating hours along the supply chain have resulted in extensive use of container staging activities, where containers are collected from Container Terminals and taken to a transport depot before final delivery.

- Industry is structured around the Vehicle Booking System (VBS) requirements at the Container Terminals, and in recent times by the Container Chain (CC) notification system at Empty Container Parks. These two systems influence the way in which transport operators manage their businesses, including fleet scheduling, use of staging and mitigation measures for delays.

- The volume of 40’ containers coming through the port is increasing at a greater rate than 20’ containers, which may have an influence on truck-loading capability. Container weights are also increasing, again influencing transport operators’ ability to load trucks to full capacity.
Two-way loading in and out of the port precinct has increased from 2012 to 2013, with about 43% of trucks being loaded in both directions. The level of empty running to and from the port precinct has dropped marginally from 30% to 29% in 2013. Two-way loading in and out of Container Terminals is much lower, with only about 11% of trucks loaded in both directions.

The key issues impacting on trucking productivity and efficiency identified in the study included:

- mismatch of operating hours along the chain making it difficult to coordinate two-way movements
- alignment and coordination of booking systems with trucking efficiency requirements
- ‘mad minute’ and the large number of carriers
- limited access to slots (VBS and CC) due to bulk runs, hoarding and not enough released by Container Terminals
- variability in service times at Empty Container Parks and Container Terminals making it difficult to coordinate round trips to drop off and pick up boxes.
- importer issues (access to site, site constraints and empty availability after unpack, etc.)
- futile trips due to poor communication.

Recommended initiatives, which have been identified as having the potential to improve productivity and trucking efficiency, were categorised into the areas of: Container Terminal operations and the Vehicle Booking System; Empty Container Park operations and ContainerChain; supply chain coordination; and transport operations. These initiatives included:

**Container Terminal operations and the Vehicle Booking System (VBS)**

a) Modify VBS to:

- eliminate ‘mad minute’
- reward efficient carrier operations
- facilitate two-way loading
- promote off peak
- promote forward planning by carriers and forwarders
- promote more bulk runs.

b) Reduce competition for day slots to improve consolidated loading by:

- developing on-port logistics operations to facilitate consolidated loading
- promoting off-peak operations
- promoting use of third party staging.

c) Investigate stronger commercial relationships between Container Terminals and transport operators.
Empty Container Park (ECP) operations and ContainerChain

a) Extend operating hours to match Container Terminals.

b) Improve service time reliability through:
   - promoting stricter adherence to ECP slots
   - introducing KPIs through leases
   - moving bulk run activities to off-peak periods.

c) Address port dominance of ECP capacity by promoting further use of existing off-port ECPs and development of further off-port capacity.

d) Modify ContainerChain system to reduce futile trips.

Supply chain coordination

a) Improve alignment of importer (shipper) operations with other supply chain participants.

b) Coordinate bookings across Container Terminals and ECPs.

c) Promote cooperative staging arrangements.

Transport operations

a) Expand training to improve understanding of VBS and ContainerChain functionality.

b) Consider role of high productivity vehicles (HPVs) for future chain development.

c) Examine vehicle standards to allow more night operations while managing community impacts.

In addition to the strategies identified in the Truck Productivity Study, the Federal and State governments have recently announced the Perth Freight Link development. The development should have a significant impact on trucking efficiency once the new infrastructure is completed. Faster and, equally important, reliable transit times will improve fleet efficiency. The possibility of high productivity vehicles (capable of carrying four TEU as opposed to the current maximum of three TEU) being permitted on this route will also confer benefits, such as the promotion of greater use of hubs with high productivity vehicles providing efficient line haul operations to distribution centres. It could, however, adversely affect port rail services and will need careful consideration to ensure the best overall outcome is achieved. An assessment of the productivity benefits and industry and community impacts was outside the scope of the Truck Productivity Study.

Detailed summaries of the key industry findings, issues impacting productivity and initiatives to improve industry efficiency are incorporated into the full Truck Productivity Study report and appendices, and can be accessed through the Fremantle Ports website at www.fremantleports.com.au
Introduction

Increasing truck productivity through the Inner Harbour has strategic value. It will result in improved efficiency of the container supply chain, reducing the impacts of heavy vehicles on the community and increasing the capacity of the Inner Harbour. Results of the annual Inner Harbour Truck Survey in 2012 indicated, however, that trucking productivity had stagnated since 2006, with the 2012 results showing that trucking productivity had declined, and 2013 results only marginally improved. In response to these findings, Fremantle Ports, with support from the Freight and Logistics Council of WA, embarked on a study of trucking productivity in Fremantle in 2013 to gain a better understanding of the current industry structure, issues impacting on efficiency and productivity, and possible changes and strategies that could be pursued to ensure improved outcomes for industry into the future.

Road transport is used for about 85% of total port container volumes and is a critical component of the container supply chain (see Figure 1). Industry is becoming increasingly aware of the need to develop in a way that not only creates efficiency today but also creates an industry that can cope effectively with future growth. Historically, Fremantle has been a port that relies largely on the peak weekday operating periods, but this will not be sustainable as volumes grow. This study has been undertaken largely to provide strategies to enable industry to gear up to handle future challenges associated with growth, rather than waiting until congestion forces industry to change the way it operates.

Figure 1: North Quay rail and road service volumes (TEU)

<table>
<thead>
<tr>
<th>Financial year</th>
<th>Road</th>
<th>Rail</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001-02</td>
<td>49.0%</td>
<td>51.0%</td>
</tr>
<tr>
<td>2002-03</td>
<td>49.0%</td>
<td>51.0%</td>
</tr>
<tr>
<td>2003-04</td>
<td>49.0%</td>
<td>51.0%</td>
</tr>
<tr>
<td>2004-05</td>
<td>49.0%</td>
<td>51.0%</td>
</tr>
<tr>
<td>2005-06</td>
<td>49.0%</td>
<td>51.0%</td>
</tr>
<tr>
<td>2006-07</td>
<td>49.0%</td>
<td>51.0%</td>
</tr>
<tr>
<td>2007-08</td>
<td>49.0%</td>
<td>51.0%</td>
</tr>
<tr>
<td>2008-09</td>
<td>49.0%</td>
<td>51.0%</td>
</tr>
<tr>
<td>2009-10</td>
<td>49.0%</td>
<td>51.0%</td>
</tr>
<tr>
<td>2010-11</td>
<td>49.0%</td>
<td>51.0%</td>
</tr>
<tr>
<td>2011-12</td>
<td>49.0%</td>
<td>51.0%</td>
</tr>
<tr>
<td>2012-13</td>
<td>49.0%</td>
<td>51.0%</td>
</tr>
<tr>
<td>2013-14</td>
<td>49.0%</td>
<td>51.0%</td>
</tr>
</tbody>
</table>

Trucking productivity has a number of definitions in the industry. The Inner Harbour Truck Survey definition of trucking productivity relates to the number of containers per truck movement in and out of the port, but productivity also involves the speed with which a truck is serviced throughout the supply chain. Speed of servicing increases the number of trips per day a truck can make. The project steering committee recognises that for transport operators, trucking productivity will include overall fleet utilisation and the level of dead running, the total time spent moving their container volumes and the speed of service through various nodes of the supply chain. Truck productivity also relates to the ability of transport operators to undertake dual loads, where containers are loaded onto the truck for movements both in and out of the facility/port precinct. These factors are inherently linked to cost and subsequently to the transport rates offered to customers. Improving productivity is a win-win as it reduces costs for carriers and their clients, and also reduces the number of trucks required to manage the freight task, which addresses community concerns.
Anecdotally, a combination of the introduction of the Vehicle Booking System (VBS) at the Container Terminals, recent introduction of an Empty Container Park (ECP) notification system (ContainerChain), restricted opening hours of customers’ premises and ECPs, and the imbalance of the import and export business of carriers may have an impact on productivity.

The primary purposes of the study were to:

- better understand the current industry profile in relation to transport carriers’ operations and factors influencing trucking productivity
- understand the impacts of the VBS and potentially ContainerChain on trucking productivity
- engage industry, in particular transport operators, in defining issues in the supply chain and identifying possible solutions, and
- undertake an assessment of proposed future changes and initiatives and the ability of these to address productivity issues in the container supply chain.

The study process that has been adopted is represented in the following figure:

<table>
<thead>
<tr>
<th>Data Collection</th>
<th>Issues</th>
<th>Solutions</th>
<th>Solution Criteria</th>
<th>Action Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data analysis</td>
<td>Identify</td>
<td>Identify</td>
<td>Truck utilisation improvement</td>
<td>Priority solutions</td>
</tr>
<tr>
<td>Transport Operator Survey</td>
<td>Refine</td>
<td>Refine</td>
<td>Commercial viability</td>
<td>Information gathering</td>
</tr>
<tr>
<td>Industry workshops</td>
<td>Categorise</td>
<td>Categorise</td>
<td>Practicality</td>
<td>Viability</td>
</tr>
<tr>
<td>Transport Company Case Studies</td>
<td></td>
<td></td>
<td>Priority</td>
<td>Industry consultation and verification</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Unintended consequences</td>
<td>Implementation partners</td>
</tr>
</tbody>
</table>

This report outlines the findings and recommendations of the study, including key initiatives that were identified and that are expected to achieve greater efficiency and productivity outcomes for industry.
Findings and Recommendations

Industry Structure

The container transport industry is complex and involves a large number of participants, information and data exchanges, and operational requirements that can hinder efficiency.

(i) Carrier numbers

Fremantle has a relatively large number of carriers handling the container volume through the port, with 7% of carriers handling 50% of the total container volume (670,000 twenty-foot equivalent units [TEU] in financial year 2012-13). This percentage is on par with Sydney which handles 3.17 times the volume (2.13 million TEU) and 3% more than both Melbourne and Brisbane which handle 2.51 and 1.07 million TEU respectively. The impact of this high number of carriers on productivity is difficult to quantify, however, greater efficiency can be achieved at the Container Terminal interface where large carriers organise bulk movement of containers off the wharf, or with carriers able to handle both an export delivery and import pick-up in one truck movement.

Figure 2: Port comparison of road transport carrier numbers

<table>
<thead>
<tr>
<th>Port</th>
<th>Fremantle</th>
<th>Melbourne</th>
<th>Sydney</th>
<th>Brisbane</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of active carriers (2013)</td>
<td>142</td>
<td>250 (estimate)</td>
<td>263</td>
<td>136</td>
</tr>
<tr>
<td>Number of carriers handling 50% of port volume</td>
<td>10</td>
<td>10</td>
<td>18</td>
<td>6</td>
</tr>
<tr>
<td>Percentage of total carriers handling 50%</td>
<td>7%</td>
<td>4%</td>
<td>7%</td>
<td>4%</td>
</tr>
<tr>
<td>Number of carriers (70-75% of port volume)</td>
<td>31 (75%)</td>
<td>20 (70%)</td>
<td>47 (70%)</td>
<td>18 (75%)</td>
</tr>
<tr>
<td>Port TEU volume 2012-13</td>
<td>670,000</td>
<td>2,513,000</td>
<td>2,126,000</td>
<td>1,070,000</td>
</tr>
<tr>
<td>TEU/carrier (top 50%)</td>
<td>33,500</td>
<td>125,650</td>
<td>59,000</td>
<td>89,200</td>
</tr>
<tr>
<td>TEU/carrier (remaining 50%)</td>
<td>2,538</td>
<td>5,235</td>
<td>2,658</td>
<td>4,115</td>
</tr>
<tr>
<td>TEU/carrier (75%)</td>
<td>16,210</td>
<td>87,955</td>
<td>31,664</td>
<td>44,583</td>
</tr>
<tr>
<td>TEU/carrier (remaining 25%)</td>
<td>1,509</td>
<td>2,732</td>
<td>1,719</td>
<td>2,267</td>
</tr>
<tr>
<td>Total port TEU/active carrier</td>
<td>4,718</td>
<td>10,052</td>
<td>8,084</td>
<td>7,868</td>
</tr>
</tbody>
</table>
(ii) Import/export balance

Fremantle also contends with an unbalanced level of import and export volumes. Overall, seaborne trade through the Inner Harbour is split roughly 50/50 between imports and exports, as it is in all major Australian ports. When reviewing the loaded container component, however, there are almost twice as many imports as exports (ratio of 1.9:1, financial year 2012-13). By comparison, Sydney has almost two and a half times and Brisbane almost one and a half times the volume of loaded imports to exports. Adelaide has the closest balance with a ratio of 0.9:1.

Figure 3: Loaded container volume split by major Australian ports

<table>
<thead>
<tr>
<th>Percentage of total loaded TEU volume</th>
<th>Imports</th>
<th>Exports</th>
<th>Ratio IM:EX</th>
</tr>
</thead>
<tbody>
<tr>
<td>Melbourne</td>
<td>57%</td>
<td>43%</td>
<td>1.31</td>
</tr>
<tr>
<td>Sydney</td>
<td>71%</td>
<td>29%</td>
<td>2.40</td>
</tr>
<tr>
<td>Brisbane</td>
<td>59%</td>
<td>41%</td>
<td>1.43</td>
</tr>
<tr>
<td>Fremantle</td>
<td>65%</td>
<td>35%</td>
<td>1.89</td>
</tr>
<tr>
<td>Adelaide</td>
<td>47%</td>
<td>53%</td>
<td>0.90</td>
</tr>
</tbody>
</table>

As a result, very few Fremantle carriers are able to achieve a balanced mix of imports and exports within their own operations. The landside destinations and origins of imports and exports can also be quite varied, with the South East Metropolitan area of Perth being an area of high import concentration, while exports are more widely spread out.

(iii) Operating hours

Another key consideration is the time of day that carriers access the port precinct, including the Container Terminals, Empty Container Parks and other on-port facilities. This is mainly during daylight hours Monday to Friday.

There is an apparent concentration of off-port carriers using the morning hours to access facilities, with the greatest volume of TEU handled per hour between 06:00 and 16:00. This is due to a variety of issues, with the opening hours of ECP and importer premises central to the cause.
ECPs in the port precinct were until recently only open 12 hours per day 06:00 to 18:00 Monday to Friday with a Saturday day shift, compared to Container Terminal operations which can extend to 24/7 based on demand.

These restricted ECP operating hours result in transport operators who want to coordinate a two-way movement to and from the port precinct, incorporating an empty container dehire to an ECP and a loaded import collection from a Container Terminal (and the reciprocal arrangement for exports), having to do so during daylight hours. Evening movements to and from the Container Terminals often involve an unladen truck movement in one direction as the opportunity to dehire/hire a container is not available. It should be noted that QUBE has recently announced that QUBE Central will extend operating hours to 22:00 in the evening Monday to Friday, the first substantial move to bring hours into line.

The varied operating hours of facilities along the supply chain have also led to an increase in the prevalence of container staging, where containers are collected from one point (e.g. the Container Terminal), held at a transport depot and delivered to the final destination (e.g. the import unpack location) at a later stage. This allows carriers to overcome issues such as opening hours of clients or ECPs, but adds some time and cost to the transport task.

Figure 5: Standard hours of operating by stakeholder group
Figure 6: Import container supply chain - container staging

Staging enables transport operators to run trucks to and from a Container Terminal collecting multiple containers loaded in one direction only in a bulk run arrangement. This can create greater efficiency for the transport operator in relation to Container Terminal operations.

(iv) ECP location

ECPs in Fremantle are highly concentrated within the port precinct, accounting for over 80% of total ECP capacity. The only off-port ECPs are Intermodal Container Services (ICS) at Forrestfield adjacent to the rail terminal and Integrated Container Logistics (ICL) at Bibra Lake. This results in a large concentration of vehicles accessing the Fremantle Inner Harbour port precinct for empty container hire/dehire and highlights a growing concern related to the impact of congestion on the ability of transport carriers to effectively coordinate movements between ECPs and Container Terminals.

(v) Slot systems

The Container Terminals have for some time now operated the landside interface with the 1-Stop Vehicle Booking System (VBS). This allows transport carriers to book a ‘slot’ for a particular hour-long time zone whereby they can deliver an export or collect an import container. The system has a wide range of functionality and also incorporates extensive business rules guiding the way in which bookings can be made. One of the long-standing issues with the VBS has been the ‘slot drop’ process which releases slots for carriers to select on a first-come-first-served basis each morning. This has created significant competition and stress for carriers as often these slots are taken up within a few moments, preventing a coordinated approach to fleet scheduling and managing container movements.

In recent years, the majority of Empty Container Park facilities in WA have also introduced a slot system (ContainerChain) to manage truck arrivals and the dehire and collection of empty containers. This system (more accurately a notification system) has enabled more flexibility for carriers, but has also resulted in complications related to coordinating between two systems with differing business rules and policies.
The two systems are central to the landside operations of the port. One of the clear messages identified through interviews and workshops, however, is the difficulty faced in managing and coordinating activities in a supply chain where constraints are emerging relating to the access arrangements at Container Terminals and Empty Container Parks. Many transport operators are having difficulty in efficiently scheduling fleets where slots are not available at suitable time intervals between the two facilities to enable two-way movements in and out of the precinct. Concern also exists where delays at one facility may result in penalties related to no-shows or missed slots at a subsequent facility. From Fremantle Ports’ perspective, the question has also been raised as to what carriers should do when waiting in the port precinct for subsequent bookings. Fremantle Ports has developed a casual parking area within the Truck Facility. Through the Congestion Management System this can operate as a Truck Marshalling Area when needed, but it has not been designed to operate as a pre-gate for regular operations of major facilities.

The introduction of the VBS at the Container Terminals a number of years ago and the more recent introduction of ContainerChain at the Empty Container Parks is placing pressure on transport operators to more accurately plan truck arrivals at these facilities and the associated flow of containers through the whole supply chain. Difficulties arise where delays are experienced at, for example, an Empty Container Park, resulting in a potential delayed arrival at the Container Terminal or when picking up empty containers from importers for dehire. Increased discipline in how fleets are managed and scheduled is required by transport operators. Operators also need to be flexible to minimise the financial impost to end customers.

(vi) Container sizes

One consideration starting to become more prominent is the impact of the shift in container size from 20’ to 40’ containers on truck utilisation (containers per truck movement). It is thought that combined with increasing weights of containers the ability of carriers to load trucks to their maximum capacity may be limited.

Figure 7: Ratio of container size, 40:20
Figure 8 below identifies the truck load configurations observed during the annual Truck Survey. An increase in both unladen movements and trucks carrying 1 x 40’ container is identified. A decrease in trucks carrying 2 x 20’ containers and 3 x 20’ containers is also evident. This may also be influenced by increased container weights making it more difficult to carry multiple containers in a single truck movement without breaching axle load limits.

Figure 8: Load configuration of container vehicles, 2006-2013

(vii) Truck utilisation

Fremantle Ports has been monitoring truck productivity and truck volumes annually since 2002. The results of the 2013 survey indicated empty running had dropped slightly from 30% the previous year to 29% of truck movements to and from the port. When investigating the inbound and outbound movements, 43% of truck movements were loaded in both directions, a 4% improvement on the prior year.
The truck utilisation rate has been stagnating in recent years but achieved a slightly improved result in 2013 at 1.31 TEU per truck movement (including unladen movements). However, TEU per loaded movements has fallen for the third year in a row: 1.84 TEU per loaded truck movement. This measure is a good indication of the volume of trucks required to manage the total container volumes through the port. Where truck productivity decreases, the likelihood is that more trucks will be required to handle the growth in containers into the future. If improvements to productivity can be achieved, the rate at which truck volumes would grow in relation to container trade growth can be constrained.
Responses from the six case study interviews identified some of the characteristics that successful companies were adopting to improve customer service, operations, efficiency, flexibility and responsiveness. These are interesting findings for other operators to consider and provide examples of specific actions that can be taken in a range of circumstances.

Transport operators, for example, are achieving success with import clients and extended operating hours by arranging with importers to have after-hours access to importer premises using keys and access codes. Although this is subject to the specific set-up of importer sites and may not be suitable for all importers, it demonstrates an effective way to ensure transport operators can continue delivery operations into off-peak times. This extended access may increase transport operators’ ability to undertake two-way loaded movements to and from depots or the port precinct.

One operator said that ‘... evening operations are a more cost-efficient way to operate as they avoid a lot of the inefficiencies seen during the day due to the various parties in the supply chain not working in a unified manner.’ The operator found that double the volume could be handled compared to daylight operations.
Key Issues Impacting on Trucking Productivity

The following section summarises some of the key issues identified in the Truck Productivity Study, the implications of each issue and some of the proposed changes that will improve productivity and efficiency. An extensive matrix of all issues identified in the survey and proposed initiatives is in Appendices D and E.

- **Mismatch of operating hours along the chain making it difficult to coordinate two-way movements**

As has been discussed earlier, the Empty Container Parks (ECPs) located within the port precinct currently operate between 06:00 and 18:00 Monday to Friday, with a Saturday day shift. In contrast, the Container Terminals have the ability to undertake 24/7 operations. These differing opening hours make it impossible for carriers to undertake two-way loaded movements to and from the port precinct in the evening, night and some weekend periods. This has resulted in increased use of staging to allow transport carriers to access the Container Terminals in the evening and may impact on the ability of some importers to have containers dehired within the free days allowed by shipping lines.

To enable the port to cope with future volume growth and reduce the risk of delays and congestion in peak day periods, it will be necessary to move towards 24/7 operations for all major facilities along the entire supply chain, with changes that include:

- QUBE Central has recently announced the intention to operate its facility until 22:00. This additional four hours in the evening to undertake two-way movements to and from the port precinct will be a welcome relief for many operators.

- Future lease obligations will require operators of major Empty Container Park and logistics facilities in the port precinct to operate extended hours on a permanent basis, further enhancing industry’s capability to operate in the evening.

- Education of other parties in the container supply chain, particularly importers, will be important to ensure these extended hours are fully used.

- **Concentration of activity during peak times**

Transport operations at the port remain concentrated in daylight hours, Monday to Friday. This creates pressure on services and facilities during these periods, and will not be sustainable as port volumes grow in the future. This concentration of activity is primarily a result of the operating hours of Empty Container Parks within the port precinct and demands from importers for cargo to be delivered direct from Container Terminals during daylight hours. To accommodate these impediments, many carriers undertake some level of staging to ensure containers can be retrieved from the Container Terminals at any time, for example, during the evening or night, and delivered to customers the next day.

As port volumes increase it will be necessary to transition to longer periods of operation, up to 24/7, by:

- extending Empty Container Park operating hours

- enabling better access to bulk runs at the Container Terminals into the evening and night periods

- promoting use of third-party staging to enable greater use of off-peak activity with Container Terminals.
Alignment and coordination of booking systems with trucking efficiency requirements

Coordinating slots between two independent systems at the Container Terminals and ECPs can be a challenge for many carriers. Bookings at both types of facilities are on a first-come-first-served basis, with the period between 06:00 and 16:00 being in highest demand. Carriers report that there are regular instances where slots at an ECP are not available until later in the afternoon, creating periods of waiting time if trucks are required to service a movement with the Empty Container Park and the Container Terminal in one visit to the port. Alternatively, trucks have to be redirected to other work elsewhere and in many instances this may result in unladen truck movements.

To avoid this, some carriers will take slots at whatever time they are available but arrive at Container Parks as required, often being early or late.

To overcome some of the difficulties experienced in coordinating Container Terminals and ECPs, changes need to be explored, such as:

– ‘tightening up’ adherence of carriers to booked slots at ECPs
– exploring coordination between the two booking systems (e.g. a ‘port slots’ approach whereby bookings can be made across both Container Terminals, or a Container Terminal and an ECP)
– progressing the Port Community System concept to more effectively link the I-Stop and ContainerChain systems.

Mad minute and the large number of carriers

A high proportion (around 65% at one Container Terminal) of Container Terminal pick-ups and drop-offs are determined by the slots that carriers can secure through the slot drop process. As previously stated, this process is not ideal and taken together with the large number of carriers at Fremantle, results in intense competition for slots in the most highly sought after time zones.

Changes to the VBS to enable better planning of operations across the day will promote better truck utilisation. Changes under consideration are:

– VBS modifications to give carriers that meet certain performance criteria (e.g. percentage of movements at off-peak times, volume per day/week, on-time arrival rates, etc.) a selection of slots across the day that enables them to schedule trucks efficiently
– Advanced Bookings to be made available to those who can organise themselves several days ahead thus avoiding the mad minute
– changes to VBS functionality at the Container Terminals to facilitate better access to coordinated bookings that will allow transport operators to achieve good fleet utilisation over extended periods of operation.

Limited access to slots (VBS and CC) due to bulk runs, hoarding and not enough released by Container Terminals

Since the introduction of ContainerChain in 2012, some operators allegedly have been hoarding notifications at Empty Container Parks to mitigate the risks associated with not having access at the required times. The aim may be to enable better fleet scheduling and to reduce exposure to no-show penalties at Container Terminals. This type of booking behaviour impacts negatively on other carriers who are unable to secure notifications to undertake their movements due to lack of availability. The Container Parks’ ability to plan may also be impacted due to notifications not representing the reality of the volume of containers and trucks trying to access the site in certain time zones.
For many years, industry has raised the issue of the impact of bulk run activities on truck servicing at the ECPs and the Container Terminals. It is believed that Container Park equipment and resources are redirected from receivals and delivery (R&D) to bulk runs when required, which results in delayed servicing of vehicles, congestion and on-road truck queuing. Carriers are booking notifications in the ContainerChain system on the assumption that the capacity represented is accurate but as bulk runs are not reflected in the system the true capacity is not shown.

Improvements are needed in the behaviour of some carriers in the way that notifications are made in the ContainerChain system. Also, ECPs and shipping lines need to be reflecting true capacity, including any bulk run activities, to ensure carriers are equipped with the correct information.

Changes to the ContainerChain system and management that will improve carriers’ compliance with notification arrival times, increase flexibility and reduce delays and servicing issues associated with bulk run activities include:

- ability to edit container ID in the notification; ContainerChain is progressing this change in 2014 to achieve greater flexibility for carriers
- monitor the on-time arrival data and follow up carriers that are significantly early/late for notifications or that hoard slots
- ensure bulk run containers are entered as notifications into the ContainerChain system to ensure accurate reporting on servicing capability and capacity
- introduction of KPIs and lease obligations to undertake bulk run activities in off-peak periods and ensure a minimum number of notifications/VBS slots are released per time zone to ensure adequate access to the facility.

Variability in service times at ECPs and Container Terminals makes it difficult to coordinate round trips to drop off and pick up boxes.

Delays at ECPs can mean that a slot at a Container Terminal is missed, incurring fines for late arrival and potentially being refused access. This, in turn, may require a new slot to be booked and a separate trip back to the port.

To avoid this problem, carriers may have to build additional buffer time into their truck schedules. This reduces truck utilisation and increases costs. Some have had to invest in additional trucks to overcome these problems.

Measures which can not only reduce truck turn time (TTT) but also the variability of TTT will improve carriers’ capability to secure two-way loads to the port and improve truck utilisation across the day. Proposals include:

- introduction of KPIs and lease obligations to maintain minimum service levels (e.g. TTT, access to slots and extended operating hours) at key on-port facilities (i.e. ECPs and Container Terminals)
- improving carrier compliance with desirable booking and arrival behaviour (e.g. reducing hoarding of slots at ECPs and improving on-time arrival rates at ECPs and Container Terminals)
- ECPs to proactively manage slot releases (e.g. make cancelled slots available for re-use, monitor capacity and release additional slots when suitable) and carrier compliance with slots (e.g. turnaround vehicles that arrive excessively early during periods of congestion and introduce slot restrictions for those that do not display appropriate behaviours)
- ECPs to manage bulk run movements outside peak operating hours to reduce site congestion and improve receival and delivery (R&D) truck turn times
- appropriate level of equipment to meet the operational demands particularly at peak periods of the day.
Importer issues such as access to site, site constraints, empty availability after unpack

Importers are a critical component of the container supply chain in respect to coordinating movements and enabling efficient transport operations. The WA market has an extensive number of small importers, often with site constraints such as inadequate space and access issues. Many importers are disengaged with the rest of the supply chain processes and not aware of the implications for the chain when delays occur or information is not available.

Carriers identify one such issue is importers indicating that a particular container is empty and ready for dehire, but when the carrier arrives it is not yet unpacked or another empty container is blocking the first. ContainerChain currently restricts the carrier from editing the container ID for a notification. This has resulted in a slot needing to be cancelled or the carrier not showing up for a slot and incurring the associated fee, and possibly not being able to make another notification for a similar time if they have access to a different container ID. ContainerChain has acknowledged the difficulty experienced by some carriers due to this restriction and is investigating system changes to allow carriers to edit this field.

Education of importers is important to facilitate better planning and container management that will enable transport carriers to achieve better efficiency. Some changes that will support this include:

- education of importers on the benefits of alternative transport arrangements, such as use of rail, after-hours receipt of containers and extended operating hours
- ability to edit container ID in ContainerChain to respond to changing requirements
- better planning of industrial precincts to ensure adequate site planning is achieved for importer premises
- improvements to information and data exchange, including accuracy of data, which may be facilitated through the development of a Port Community System or similar initiative.

Futile trips due to poor communication

Significant costs are incurred by transport carriers where ‘futile trips’ occur, and often these costs are unable to be passed on to the end customer. Some carriers cited instances where notifications are made via ContainerChain to collect an empty container for export from an Empty Container Park, but on arrival the container is not available, out of stock or there is a delay while the container is prepared. In some instances, this may result in a futile trip for the carrier and the requirement to rebook a ContainerChain notification and return to the ECP at a later stage.

Although historically it has been understood that stock level information cannot be released to the carrier, improvements must be made to communication to ensure futile trips are minimised.

Other circumstances include container redirections from one ECP to another. On arrival, carriers are required to provide physical documentation for the container. This can result in a futile trip to the ECP, or the need to make a detour to the transport depot to collect paperwork. In an era of sophisticated information exchange processes, it is unreasonable for industry to have to rely on paperwork to collect or dehire containers.
Changes to address such circumstances are being investigated by ContainerChain, including:

- redirection functionality to provide notice to transport operators if they are required to go to a different facility (already in place for most ECPs but requires better take-up by operators)
- ability for carriers to enter information directly into ContainerChain where there is no Electronic Data Interchange, avoiding the need for physical paperwork
- communication protocols to notify carriers when a container type is out of stock at the ECP (or is likely to be unavailable). This will allow carriers to take control of whether they retain the notification and risk going to the ECP when the container may not be available.
Conclusion

The Truck Productivity Study Action Plan is focused on a number of improvement initiatives aimed at enhanced truck utilisation, productivity and operating efficiency. The Productivity Improvement Strategy following identifies the key initiatives that will be progressed as priorities, noting that some of these may be long term.

Consultation with industry stakeholders in case study interviews, the transport operator survey and industry workshops identified a significant number of other issues and suggested changes (see Appendices D and E). Although many of them have been identified as low or medium priority, there are a significant number worth pursuing. With ongoing developments of facilities, operating requirements, systems and infrastructure they will need to be continually reviewed. The WA Port Operations Task Force and the WARTA Port Carriers Working Group will be forums to progress many of these issues and possible changes, in consultation with relevant stakeholders and implementation partners. A full work program will be developed with these parties following their review of this report.

Initiatives identified in the following Truck Productivity Improvement Strategy have been prioritised based on the outcome of industry consultation and workshops and intensive review with the project steering committee. A number of industry changes have occurred since the project began and the steering committee has taken them into account in the evaluation of priorities and specific actions to be progressed. Those selected have been identified as priorities for addressing current inefficiencies in the supply chain impacting on productivity as well as strategic long-term initiatives. The aim is to set up industry for a future with greater volumes through the port while minimising community impacts. The steering committee felt it necessary to concentrate on a manageable number of initiatives while capturing all those raised throughout the course of the study.

Industry has made significant steps towards a more efficient supply chain in recent years and the efforts of all parties are to be commended. It is only through industry participants working together that changes will be successful in the long term.
Truck Productivity Improvement Strategy

Key Issues Impacting on Trucking Productivity

- Mismatch of operating hours along the chain
- Concentration of activity during peak times
- Alignment and coordination of booking systems with trucking efficiency requirements
- ‘Mad minute’ and the large number of carriers
- Limited access to slots (Vehicle Booking System and ContainerChain) due to bulk runs, hoarding or not enough released
- Variability of service times at key points in the chain
- Importer issues such as site constraints, empty availability after unpack
- Futile trips due to poor communication

Strategy to Improve Trucking Productivity

1. Container Terminals
   a) Modify Vehicle Booking System (VBS) to:
      - eliminate ‘mad minute’
      - reward efficient carrier operations
      - facilitate two-way loading
      - promote off peak
      - promote forward planning by carriers and forwarders
      - promote more bulk runs.
   b) Reduce competition for day slots to improve consolidated loading by:
      - developing on-port logistics operations to facilitate consolidated loading
      - promoting off-peak operations
      - promoting use of third-party staging.
   c) Investigate case for establishing commercial relationships.

2. Empty Container Parks (ECPs)
   a) Extend operating hours to match Container Terminals.
   b) Improve service time reliability through:
      - promoting stricter adherence to ECP slots
      - introducing KPIs through leases
      - moving bulk run activities to off-peak periods.
   c) Address port dominance of ECP capacity through promoting further use of existing off-port ECPs and development of further off-port capacity.
   d) Modify ContainerChain (CC) system to reduce futile trips.

3. Supply Chain Coordination
   a) Improve alignment of importer (shipper) operations with other supply chain participants.
   b) Coordinate bookings across Container Terminals and ECPs.
   c) Promote cooperative staging arrangements.

4. Transport Operations
   a) Expand training to improve understanding of VBS and CC functionality.
   b) Consider role of high productivity vehicles (HPVs) for future chain development.
   c) Examine vehicle standards to allow more night operations while managing community impacts.
# Truck Productivity Action Program

<table>
<thead>
<tr>
<th>Issue</th>
<th>Initiative</th>
<th>Specific actions</th>
<th>Timing</th>
<th>By whom</th>
<th>Comments</th>
</tr>
</thead>
</table>
| 1. Container Terminal operations and Vehicle Booking System (VBS) | a) Reduce the reliance on the ‘mad minute’ and the associated impact on efficient truck scheduling. | Modify the VBS to:  
- enable more efficient truck scheduling  
- eliminate ‘mad minute’  
- reward efficient carrier operations  
- facilitate two-way loading  
- promote off-peak operations  
- promote forward planning by carriers and forwarders  
- promote more bulk/tagged runs | i. Identify suitable incentives for carriers that are able to plan in advance, use off-peak periods, and achieve greater utilisation/two-way loading.  
ii. Extend the use of tagged runs.  
iii. Monitor implementation of Advanced Bookings in Brisbane and Melbourne and determine with DP World likely timing of introduction to Fremantle. | Second half of 2014 | Container Terminals, I-Stop  
- Patrick has implemented a number of VBS changes in June 2014 including:  
  - reduction of time zone leeway before zone (now 15 minutes) and after zone (now 15 minutes plus 15-minute extension with late fee) |  
- early opening of slots when possible. |
|  | b) Competition for day slots making consolidated loading difficult | develop on-port logistics operations to facilitate consolidated loading  
- promote off-peak operations  
- promote use of more third party staging. | i. Develop new on-port logistics operations.  
ii. Incorporate KPIs related to handling greater volume of containers outside peak in new logistics site leases. | Rous Head Cargo Services (RHCS) - in operation; Toll - 2015 | RHCS, Fremantle Ports  
- On-port logistics operators close to Container Terminals and ECPs may be able to achieve greater operating efficiencies such as increased truck utilisation and greater ability to consolidate loads to/from port precinct. These new sites may also encourage cooperative staging arrangements to develop. |
|  | c) Unbalanced commercial relationship between carriers and Container Terminals | Investigate case for establishing commercial relationships. | i. Consult with industry on acceptable commercial arrangements. | Ongoing | WA Port Operations Task Force, Port Carriers Working Group  
- A Port Botany Landside Improvement Strategy (PBLIS) model for two-way commercial penalties is not desired in the Fremantle market, however, equity and service issues exist that must be addressed. |
### 2. Empty Container Park operations and ContainerChain

<table>
<thead>
<tr>
<th>Issue</th>
<th>Initiative</th>
<th>Specific actions</th>
<th>Timing</th>
<th>By whom</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Difficulty arranging two-way movements in/out of port precinct in off-peak periods</td>
<td>Extend operating hours to match Container Terminals; frees up notifications during peak day shift.</td>
<td>i. Extend QUBE Central operating hours to 22:00 Monday to Friday.</td>
<td>Implemented (May 2014)</td>
<td>QUBE</td>
<td>QUBE Central recently announced the facility would operate to 22:00 Monday to Friday. New ECP sites will begin operations progressively from mid-2015. New logistics sites KPIs introduced to encourage greater volume of off-peak movements with ECPs and Container Terminals.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ii. Introduce lease conditions for new ECP sites to operate extended hours.</td>
<td>2015</td>
<td>Fremantle Ports</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>iii. Introduce lease conditions for new logistics sites to use ECPs and Container Terminals outside peak periods.</td>
<td>2014/2015</td>
<td>Fremantle Ports</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>iv. Promote use of extended ECP hours with industry/carriers/importers.</td>
<td>Ongoing</td>
<td>WA Port Operations Task Force, Importer Working Group</td>
<td></td>
</tr>
<tr>
<td>b) Variability in service times through ECPs</td>
<td>Improve service time reliability through: ■ promoting greater adherence to ECP slots ■ introducing maximum service times through leases ■ moving bulk runs to off-peak periods.</td>
<td>i. Monitor truck turn time KPI through new lease arrangements.</td>
<td>2015</td>
<td>Fremantle Ports</td>
<td>Work has begun with ECPs to identify and follow up carriers that demonstrate undesirable booking or on-time arrival patterns. Further work is required to determine the appropriate balance between strict business rules and flexibility within the system. It should be noted that there may be wider consequences along the chain of further restricting the allowable window for carriers to enter ECPs without penalty.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ii. Monitor carriers’ compliance with on-time arrivals.</td>
<td>June 2014</td>
<td>ECPs, ContainerChain, Fremantle Ports</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>iii. Monitor carrier behaviour such as slot hoarding and late cancellations.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>iv. Address issues preventing further use of off-peak periods for bulk run movements.</td>
<td>Second half of 2014</td>
<td>WA Port Operations Task Force, ECPs, Container Terminals, shipping lines</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>v. Monitor bulk run movements through new lease arrangements.</td>
<td>Mid-2015, ongoing</td>
<td>Fremantle Ports</td>
<td></td>
</tr>
</tbody>
</table>
### Issue 1: Port dominance of ECP capacity

**Description:** Promote further use of off-port ECPs. Create greater off-port capacity.

<table>
<thead>
<tr>
<th>Specific actions</th>
<th>Timing</th>
<th>By whom</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>i. Monitor use and capacity of existing off-port ECPs.</td>
<td>Ongoing</td>
<td>Fremantle Ports</td>
<td>On-port ECPs comprise greater than 80% of total ECP capacity.</td>
</tr>
<tr>
<td>ii. Promote use of redirection functionality and triangulation to extend use of off-port ECPs.</td>
<td>Second half of 2014</td>
<td>I-Stop, ContainerChain, ECPs</td>
<td>Developing further off-port facilities and promoting their use will provide significant capacity improvements and reduce congestion in the Inner Harbour in the long term.</td>
</tr>
<tr>
<td>iii. Work with Government to identify suitable off-port locations for future ECP development.</td>
<td>Long term</td>
<td>Fremantle Ports, WA Port Operations Task Force</td>
<td></td>
</tr>
</tbody>
</table>

### Issue 2: Difficulty managing variability in the supply chain; prevalence of futile trips related to ECP operations

**Description:** Modify ContainerChain system to reduce futile trips and improve efficiency.

<table>
<thead>
<tr>
<th>Specific actions</th>
<th>Timing</th>
<th>By whom</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>i. Reduce period of time that a notification can be made from two hours to 15 minutes prior to start of zone.</td>
<td>Completed</td>
<td>ContainerChain, ECPs</td>
<td>ContainerChain has begun working on these initiatives, with the ability to edit container ID the first priority. Timing of availability is unknown at this stage.</td>
</tr>
<tr>
<td>ii. Allow container ID to be edited in ContainerChain notifications.</td>
<td>Mid-2014</td>
<td></td>
<td></td>
</tr>
<tr>
<td>iii. Ensure cancelled slots returned for re-use.</td>
<td>Ongoing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>iv. Introduce ability to enter container details by transport carrier if Electronic Data Interchange (EDI) does not exist, to avoid paper Delivery Order (DO) requirement.</td>
<td>TBC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>v. Provide warning to carrier when export container not available for collection.</td>
<td>TBC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>vi. Ensure bulk containers are incorporated into the ContainerChain system for visibility of true ECP capacity and workload.</td>
<td>TBC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Issue</td>
<td>Initiative</td>
<td>Specific actions</td>
<td>Timing</td>
</tr>
<tr>
<td>-------</td>
<td>------------</td>
<td>------------------</td>
<td>--------</td>
</tr>
<tr>
<td>a) Misalignment of shipper practices with other supply chain participants</td>
<td>Align shipper (particularly importer) practices with other supply chain participants to improve:</td>
<td>i. Promote extended hours solution with industry, e.g., after-hours access to importer sites, extended hours during peak.</td>
<td>Commenced/ongoing</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ii. Continue work of the WA Port Operations Task Force Peak Season Working Group to focus on extended and flexible working hours during peak periods (i.e., Christmas, Easter).</td>
<td>Ongoing</td>
</tr>
<tr>
<td></td>
<td></td>
<td>iii. Communicate the efficiency implications of demanding direct delivery, specified containers, etc.</td>
<td>Second half of 2014</td>
</tr>
<tr>
<td>b) Difficulty arranging two-way movements in/out of port precinct in off-peak periods</td>
<td>Coordinate bookings across terminals and ECPs to improve transport ability to coordinate two-way loading opportunities.</td>
<td>i. Establish capability of Port Slots initiative to achieve cross-terminal bookings.</td>
<td>Second half of 2014</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ii. Investigate ability to use Port Slots across terminal and ECP booking systems.</td>
<td>TBC (medium/long term)</td>
</tr>
<tr>
<td>c) Large number of carriers accessing Container Terminals during peak day periods</td>
<td>Promote cooperative staging arrangements.</td>
<td>i. Investigate operating and commercial models of third-party staging operations in Eastern States.</td>
<td>July 2014</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ii. Encourage development and use of local third-party staging operations.</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Issue</td>
<td>Initiative</td>
<td>Specific actions</td>
<td>Timing</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>4. Transport operations</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a) Large number of carriers accessing Container Terminals during peak day periods</td>
<td>■ Develop on-port logistics operations to facilitate consolidated loading.</td>
<td>i. Develop new on-port logistics operations.</td>
<td>Rous Head Cargo Services (RHCS) - in operation; Toll - 2015</td>
</tr>
<tr>
<td></td>
<td>■ Promote off-peak operations.</td>
<td>ii. Incorporate KPIs to handle greater volume of containers outside peak in new logistics site leases.</td>
<td>Ongoing</td>
</tr>
<tr>
<td></td>
<td>■ Promote use of more third-party staging.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b) Transport carriers not fully using all available system functionality to achieve efficiency and higher productivity movements</td>
<td>Expand training to improve understanding of VBS and ContainerChain functionality.</td>
<td>i. Promote two-way loading and higher truck utilisation at terminals.</td>
<td>Ongoing</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ii. Educate transport operators on existing system functionality relevant to state/facility.</td>
<td>July 2014/ ongoing</td>
</tr>
<tr>
<td></td>
<td></td>
<td>iii. Develop new functionality to increase efficiency and truck utilisation.</td>
<td>Ongoing</td>
</tr>
<tr>
<td>c) Limitations on use of high productivity vehicles (HPVs) outside port precinct in WA</td>
<td>Consider role of HPV for future chain development.</td>
<td>i. Monitor HPV use in Eastern States.</td>
<td>Ongoing</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ii. Identify costs and benefits for application in WA.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>iii. Identify risks to rail and associated community concerns.</td>
<td></td>
</tr>
<tr>
<td>Issue</td>
<td>Initiative</td>
<td>Specific actions</td>
<td>Timing</td>
</tr>
<tr>
<td>-------</td>
<td>------------</td>
<td>------------------</td>
<td>---------</td>
</tr>
<tr>
<td>d) Noise and community impacts of increasing truck volumes on road network</td>
<td>Examine vehicle standards to allow more night operations while managing community impacts.</td>
<td>i. Investigate vehicle and driver operating standards to manage night operation impacts on the community.</td>
<td>Ongoing</td>
</tr>
</tbody>
</table>
Further Information

To download the full Truck Productivity Study report, visit www.fremantleports.com.au

For more information, contact:

Jennifer Hall  
Senior Logistics Analyst  
Tel: 08 9432 3662  
jennifer.hall@fremantleports.com.au

Doug Brindal  
Manager Logistics  
Tel: 08 9430 3515  
doug.brindal@fremantleports.com.au